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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,318	09/19/2006	Conrad Roessel	095309.56955US	4559
23911 7590 05/30/2008 CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			EXAMINER CUEVAS, PEDRO J	
			ART UNIT 2834	PAPER NUMBER
			MAIL DATE 05/30/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/554,318

**Applicant(s)**

ROESEL, CONRAD

**Examiner**

PEDRO J. CUEVAS

**Art Unit**

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 March 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6 and 8-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 6 and 8-16 is/are rejected.  
7) ☒ Claim(s) 10 and 16 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 24 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date 1/14/08  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed on March 6, 2008 have been fully considered but they are not persuasive.
2. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).
3. In response to applicant's argument that "One of the objects of Severinsky is that "the internal combustion engine is sized to efficiently provide the average power required for operation at moderate and highway speeds".", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.
4. In response to applicant's argument that "Severinsky does not, however, disclose that the plot of Figure 2 is used for determining whether to operate the electric motor as a generator or a motor", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.
5. In response to applicant's argument that "Long and Severinsky each do not disclose or suggest using an electric motor as a generator or motor based on a "quotient of a load change and

fuel consumption”, it must be noted that if the “acts” of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. *Schrader*, 22F.3d at 294-95, 30USPQ2d at 1458-59. Thus, a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process. MPEP 2106.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. Claim 8 recites the limitation “as claimed in Claim 7” in line 1. There is insufficient antecedent basis for this limitation in the claim.

For the purpose of the present Office Action, the Examiner has treated Claims 8 and 9 as being dependent on Claim 6.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 6 and 8-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,367,570 B1 to Long, III et al. in view of U.S. Patent No. 5,343,970 to Severinsky.

Long, III et al. clearly teaches the construction of a hybrid electric vehicle with electric motor providing strategic power assist to load balance internal combustion engine, comprising:

an internal combustion engine (150), an electric motor (200), a battery (400)  
electrically coupled to the electric motor and a sensor (462) for recording a state of  
charge of the battery;

wherein

i) the motor can be switched between operation in a motor mode and  
operation in a generator mode, and

ii) the motor can be mechanically coupled to the internal combustion  
engine and/or to an output drive of the system for the purpose of driving said  
system or for the purpose of said internal combustion engine or said output drive  
of the system driving the motor in the generator mode; and

a method of operating said motor, wherein:

when the internal combustion engine is operating and is coupled to the  
output drive, the electric motor operates, predominantly in the generator mode  
only when the load on the internal combustion engine is in a first, relatively  
lower, range; and predominantly in the motor mode when the load on the internal  
combustion engine is in a second relatively higher, range.

However, it fails to disclose:

changes in fuel consumption of the internal combustion engine which occur in response to load changes are recorded as a function of rotational speed of the internal combustion engine, and are stored; and

the electric motor being operated as a generator when the quotient of a load change and fuel consumption change exceeds a first threshold value; and is operated as a motor when the quotient of a load change and fuel consumption is less than the first threshold value or a second threshold value.

Severinsky disclose the construction of a hybrid electric vehicle, wherein as shown in Figure 2:

changes in fuel consumption of the internal combustion engine which occur in response to load changes are recorded as a function of rotational speed of the internal combustion engine, and are stored; and

the electric motor is being operated as a generator when the quotient of a load change and fuel consumption change exceeds a first threshold value; and is operated as a motor when the quotient of a load change and fuel consumption is less than the first threshold value or a second threshold value;

for the purpose of realizing substantially increased fuel economy and reduced pollutant emissions as compared to present day vehicles while suffering no significant penalty in performance, operating convenience, cost, complexity, or cost.

It would have been obvious to one skilled in the art at the time the invention was made to use the operational characteristics of a hybrid electric vehicle disclosed by Severinsky on the hybrid electric vehicle with electric motor providing strategic power assist to load balance

internal combustion engine disclosed by Long, III et al. for the purpose of realizing substantially increased fuel economy and reduced pollutant emissions as compared to present day vehicles while suffering no significant penalty in performance, operating convenience, cost, complexity, or cost.

It would have also been obvious to one having ordinary skill in the art at the time the invention was made to select the quotient of a load change as a first and second threshold values to operate the electric motor as a generator or as a motor, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It must be noted that if the “acts” of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. *Schrader*, 22F.3d at 294-95, 30USPQ2d at 1458-59. Thus, a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process. MPEP 2106.

It has been held that the recitation that an element is “capable of” performing a function (“can be switched”, “can be mechanically coupled”) is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

11. With regards to claims 8 and 14, Severinsky disclose the electric motor being operated with increasing generator power when the quotient of the load change and the consumption change of the internal combustion engine increases.

12. With regards to claims 9 and 15, Severinsky disclose the electric motor being operated with increasing motor power when the quotient of the load change and consumption change of the internal combustion engine falls.

13. With regards to claims 10 and 16, Long, III et al. disclose that when the electric motor is being continuously positively coupled to the output drive, the electric motor must always operate in either the motor mode or the generator mode. It must be noted that all known electric motors, when in operation, can only produce mechanical power when provided with electrical energy or produce electrical energy when provided with a mechanical input. This inherently means that, when in operation, they must clearly be operating in either motor or generator mode.

14. With regards to claims 11 and 12, Long, III et al. disclose the system being a hybrid-drive-system / hybrid-propulsion-system in a motor vehicle. It must be noted that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

### ***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after



the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PEDRO J. CUEVAS whose telephone number is (571)272-2021. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number:  
10/554,318  
Art Unit: 2834

Page 9

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